ECOPATENT®

MEDICAL INNOVATIONS

OPERATING INSTRUCTIONS

USER MANUAL

ECOPATENT® Macerator 650.3/750.3/750.3.1/750.3.2

CE

Before installing and commissioning the product please read and follow

Operating instructions

and

Safety Precautions

EC Declaration of Conformity
regarding the Machinery Directive 98/37 EEC; Enc. II A

Herewith we declare:	BOSK Corp. Spitzkunnersdorfer Str. 8 D-02782 Seifhennersdorf Germany

that the product desginated below corresponds to the relevant basic safety and health standards of the EU Directives based on its concept development and construction as well as the type introduced by us. This declaration will be invalid in case of a change in product without our explicit consent.

Product:	ECOPATENT® Macerator 650.3/750.3/750.3.1/750.3.2
Type:	Macerator/Disposal System
Number:	650.3/750.3/750.3.1/750.3.2
Relevant directives:	EC Machinery Directive (Directive 98/37/EEC relating to machinery) EC Low Voltage Directive (73/23/EWG) EC Directive Electromagnetic Compatibility (89/336/EWG) as amended 93/31/EWG
Applied harmonized standards, especially:	EN 60335-1 : 1994, EMV : EN 55022, EN 55014

Date: 23.03.2005 BOSK Corp. Gert Sommer Director

Information about the ECOPATENT® Macerator:

Name/Designation:	ECOPATENT® Macerator
Type:	650.3/750.3/750.3.1/750.3.2
Serial number:	_____
Date of manufacture:	_____

Function control (date/name):

_____

EAN/Bar-Code:

Specialized Dealer (Company stamp):

Stamp/date/signature:

1. Delivered to customer by:

on:

_____

2. Briefing by:

on:

_____

3. Confirmed by:

_____

4. Service/customer service:

_____

Business location:

Content:

1. General information 5

2. Technical specifications 6

3. Installation 8

4. Operating components 10

5. Operating of the machine 11

6. Safety Precautions 12

7. Cleaning and maintenance 13

8. Dimensions 14

9. Service/customer service 15

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1. General information

The ECOPATENT® Macerator is a device for quick, hygienic, cost saving and environmentally friendly liquidation and disposal of disposable containers with faecal content.
The new hygienically immaculate containers - bedpans, toilet bowls, kidney bowls, sputum cups, urine bottles etc. – made of pure cellulose are completely biodegradable. The ECOPATENT® Macerator pulps and liquefies these materials with only a limited amount of water and drains it directly into the sewage system!

The optimal operation places for this new system are and facilities with an important hygienic issue. Especially by using the disposable containers, elderly and patients in need of care are provided with a maximum of hygienic safety. Using this system infections are not likely to happen. In contrast to common thermal disinfection equipment, this system offers considerable savings of operating costs. Furthermore, there is a significant time saving for nursing staff.

Please note:

It's only allowed to liquefy the recommended containers from the manufacturer and distributor in the device. The device must not be used for liquidation of rubber gloves, hypodermic syringes, diapers, incontinence liner, bonds or metal articles etc.

2. Technical specification:

• Voltage	230 V / 50 Hz
• Protection class	I
• Protection category	IP 23
• Power/engine	1.1 KW
• Power/pump	550 W
• Rated speed/engine	1.350 r/min
• Noise level	average 59 dB
• Dimensions: width x height x depth	53 x 92.5 x 65 cm
• Weight	104 kg
• Water connection	KW ½“ or ¾“; 0.1 – 0.8 MPa
• Drain	At the wall or in the floor DN 100 Minimum DN 70 At the device DN 70 At the wall 190 mm over ground floor
• Fuse protection	max. 16 A
• Water tank	26 Liters
• Water consumption per cycle	19.7 Liter
• Period per working cycle	3 minutes
• Disinfection tank	6 Liters
• Connection	cable: H05VV-F3G 1.5 mm², approx. 3 m long, 3 x 1.5 mm² flexible including safety plug with grounding provisions

2.1 Disposable containers recommended for use

The advantage of using disposable containers made of pure cellulose and completely biodegradable recycled paper is, that the inside surface of these products remains water-resistant for at least 24 hours as a result of a special pressure process.

However, if these containers are in the device, they will completely liquefy within 3 minutes during operating cycle in order to be rinsed through the drain.

Disposables and max. quantities per operating cycle:

NT-CB 1	Bowl for Toilet Seat		**3**
SET 1	Bowl for Toilet Seat with Lid		**2**
PM 3	Bedpan		**3**
SET 2	Bedpan with Lid		**2**
UB 1	Urine Bottle		**5**
SET 3	Urine Bottle with Lid		**4**
SET 4	Urine Bottle with Lid and Urine Absorber		**4**
SET 5	Urine Bottle with Lid and Measuring Tape		**4**
EM 2	Kidney Bowl		**6**

3. Installation

The installation of the ECOPATENT® Macerator may only be processed by qualified employees or fitters from the producer or distributor.

Locations

The device has to be installed in a proper room, which ensures the necessary hygienic requirements and provides:

- a fused current supply 230 V / 50 Hz – and a wall socket
- a water connection with cut-off valve
- a connection to the drainage system with min. DN70, optimal DN 100
- a flat and water-resistant floor with drainage, thus the device will be set up absolute horizontal. The plastic feet with rubber sole are adjustable via screw thread.
- floor drainage is installed

The device should only be installed in rooms with adequate sound-absorbing thus the noise level is not able to pass max. 30 dB (A) in neighbouring rooms.

Water connection

Within the scope of delivery the ECOPATENT® Macerator contains an elastic junction hose. This hose has a ¾" junction screw on both ends. The water supply is on the rear side of the device, exactly at the right corner of the bottom.
A backflow valve prevents water from flowing out in case of a detached junction screw. According to the DVGW-regulations, an additional assembled overflow in the water tank assures backflow prevention.

A cold water connection is sufficient. It is recommended to use a valve with a ¾" junction thread as a wall mounting. The water supply should be installed – if possible – close to the ECOPATENT® Macerator or behind the device.

Drain connection

The drain at the backside of the device has a nominal width of DN 70. It is recommendable to connect the device via reduction to a drain with a nominal width of DN 100. However, the wall mounting must not stand in a higher position than the drain of the device. The sewage pipes should be made of stable plastic HT pipe.

Electrical installation (according to DIN VDE 0100/DIN VDE 0107!)

The isolated ground receptacle, which is necessary to connect the device, has to be fixed clearly visible and accessible close to the device. The electric circuit to connect with the device has to be fused separately (max. 16A) and furthermore protected over a FI – protect switch.

Please note:

If the plug is not accessible and clearly visible, a main switch (according UVV) has to be installed clearly visible and accessible.

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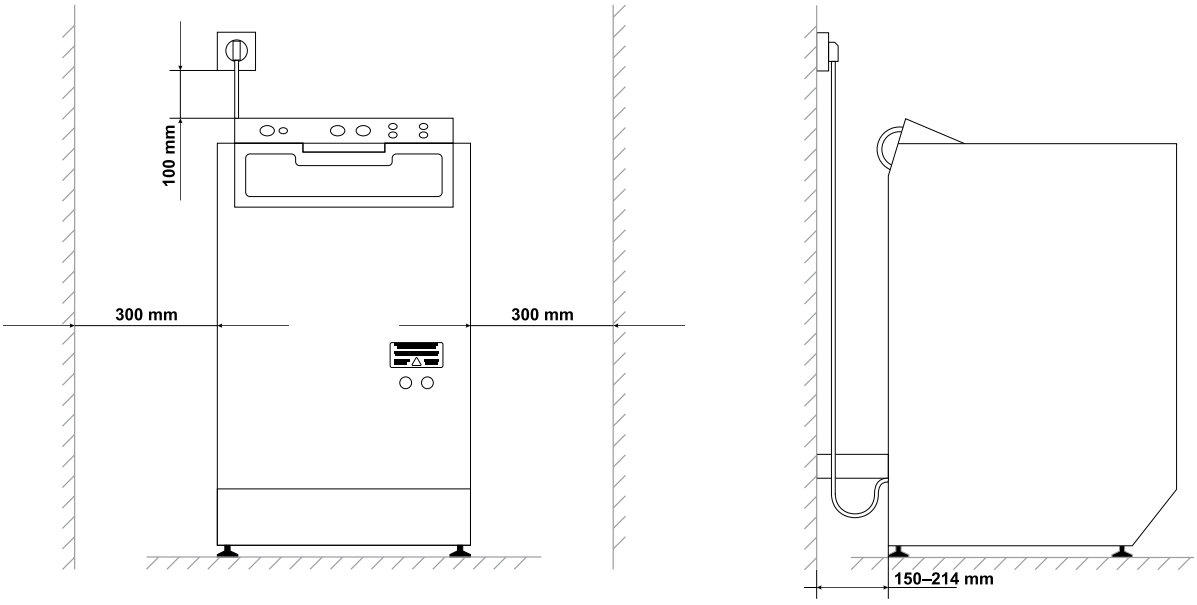
A)



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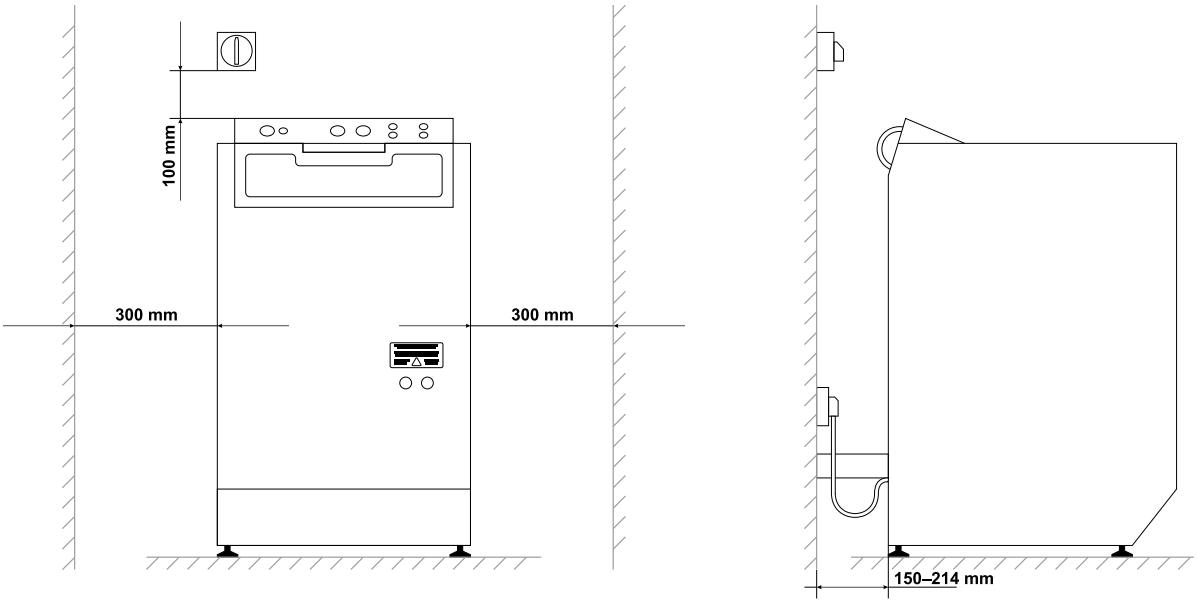
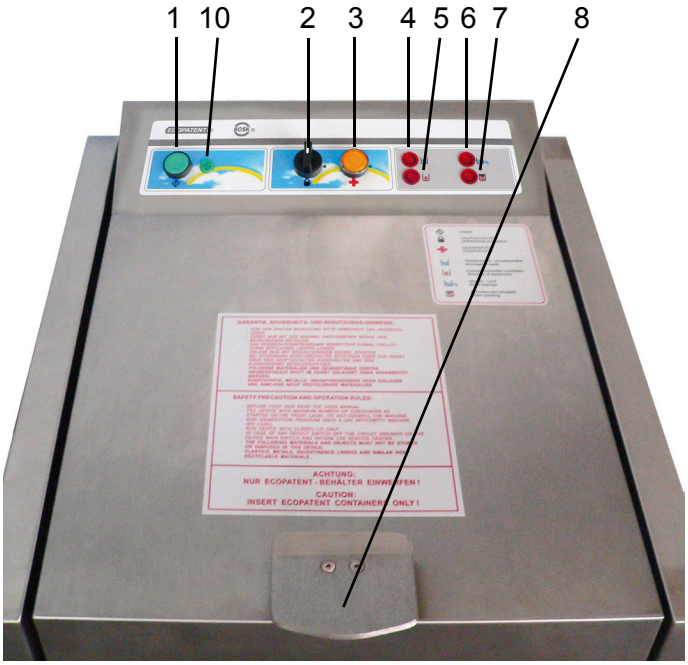


4. Operating components



Above view

Above view with open cover

1	start button – green	starts a operating cycle of 3 minutes
2	main-/key switch	on/off: switches the whole current supply
3	turn-switch/disinfection	on/off: switches the disinfection during the operating cycle
4	pilot light – red	it only lights up if the start key is pressed and if there is a water shortage in water tank. Thus, you can not open the device.
5	pilot light – red	disinfection: only lights up, if there is not enough disinfectant in the disinfection-reservoir. It is possible to put the device in operation.
6	pilot light – red	signalizes a fluid loss (water, disinfection) in the lower tub so that the device will switch off automatically.
7	pilot light – red	motor blockade: lights up if the motor is overloaded and switches off the device.
8	closure/opening handle	function: with electromagnetic safety interlock and mechanical lock. The unit doesn't work with open cover and during the working process it is not possible to open the cover.
9	closure screwing	disinfection tank! fill pure disinfectant into the tank
10	pilot light – green	indicates the state of readiness

5. Operating of the machine

The operating of the ECOPATENT® Macerator is quite simple and easily practicable after briefing and reading the instruction manual. However, it is recommendable for the safety of the operating staff, as there is a risk of infection due to the disposal of faecal waste, to adopt protection measures.

5.1 The most important operating steps:

- plug in the connector and ensure current supply
- water supply open/close
- cover open/close
- fill in the disposable containers (note max. quantity)
- check if there are any foreign substances in the chamber/objects which can not be liquefied

Attention:
All objects which are not permitted to be liquefied have to be removed from the tube. Before objects will be removed from the tube it is absolutely necessary to switch off the current supply or unplug the device!

- turn main switch on
- press start button
- check if the device starts properly
- disinfection switch on/off
- start a disinfection cycle without any content once a day and again at the end of the day.

Pay attention to the duration of residence time of the disinfectant, because the process is working with a 1% mix inside. As long as it is required open the cover, unplug the device and close the water supply.

Workflow of the ECOPATENT® Macerator:

- Check if the current supply and the water supply are ready to operate. If necessary, plug in the connector, switch on the main switch or open the water supply.

- Afterwards, turn the key switch a ¼ turn right to position “on”. The water tank will be filled up with 26 Liters of water immediately. As long as the tank isn’t filled up the machine won’t start.

- Open the cover by tilting the handle back down – press up at the front.

- Now you can fill the tube with disposable containers. Please note the max. filling quantity.

- Close the cover from above with sufficient pressure until the lock clicks audible.

- Control if none of the red pilot lights (Pos. 4, 6 and 7) signalizes any malfunction. The disinfection switch should be in “off”-position; the red pilot light for disinfection can be disregarded during normal operating cycle.

- Now fully press the start button. The green light flashes and the device starts to operate after a few seconds. At first, the water will be pumped into the tube (approx. 30 seconds). Only when the pump process is finished, the chopping up process will begin. This process will take approx. 2 minutes. Only after the motor stopped, the drain valve will open and the chamber will drain.
  As soon as the tube is drained the cleaning cycle starts. Water will be pumped into the tube and possible remains will be removed.

- If the cleaning cycle finished, the cover interlock will open automatically and new disposable containers can be put inside the tube.

- Start a disinfection cycle without any content once a day and again at the end of the day. Pay attention to the duration of residence time of the disinfectant, because the process is working with a 1% mix inside. As long as it’s required open the cover, unplug the device and close the water supply.

6. Safety Precautions

- During operating cycle, unauthorized people are not allowed to encroach.
- Check all supply lines at regular intervals: Water supply – water drain – power cable!
- In case of unusual operating noises, disturbances or faulty working, immediately switch off the device, unplug it, call the repair service and do not use the device until it is repaired.

In order to debug, check the following disturbance information:

1. Are there any improper objects in the tube?
2. What kind of disturbance is signalized by pilot lights?
3. Are all the conductions free of damage?
4. Is it impossible to open the cover?
5. Overheating/burnt smell?

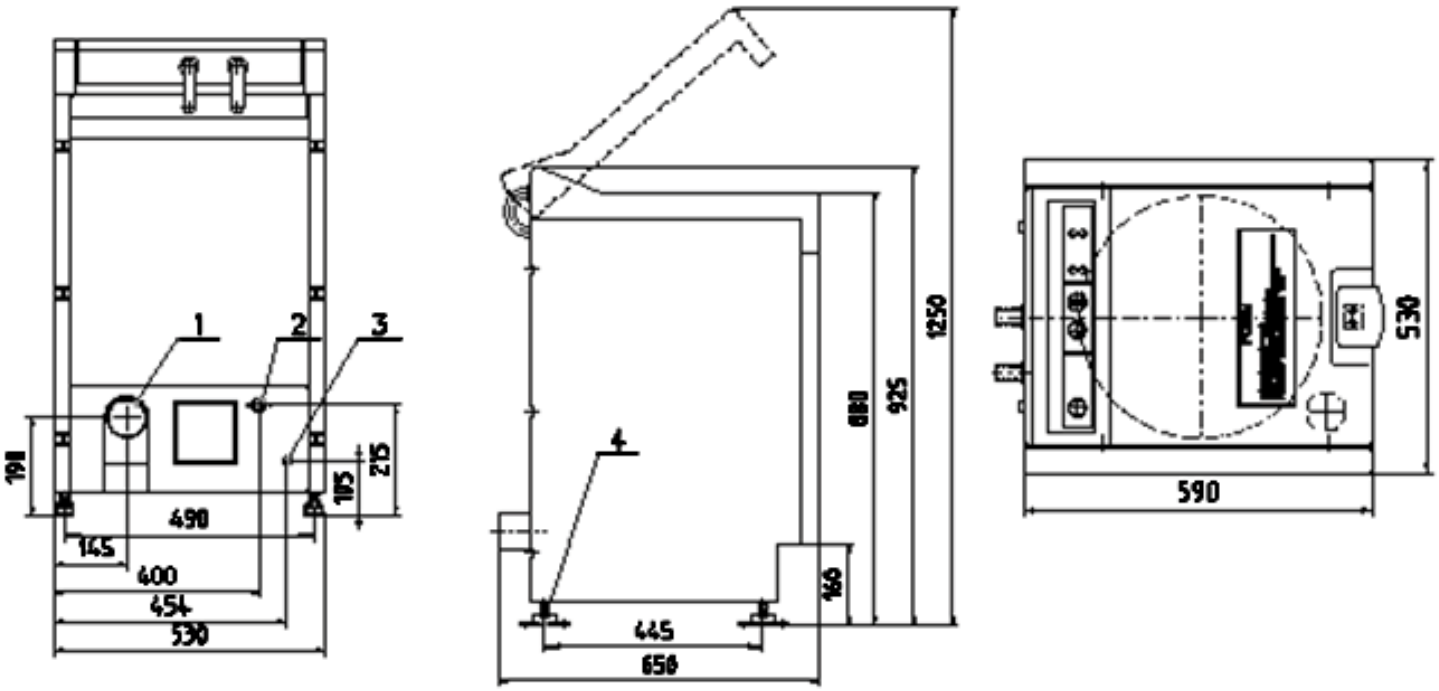
6.1 Fault clearance:

Display	Failure	Solutions
green lamp (Pos. 10) does not light up	No current!	1. Check, if power plug is plugged in? 2. Check, whether the fuse is working? 3. Key switch in position “on”? If all is checked und the failure isn’t cleared - inform the repair service!
red lamp (Pos.4) lights up	No water! Respective water shortage!	1. Check if the pre-inhibiting is open? 2. Check if the hose-connection is broken? 3. Check, if there is pressure in the mains? If all is checked und the failure isn’t cleared - inform the repair service!
red lamp (Pos.5) lights up	No disinfectant!	1. Refill disinfectant into the tank! If the lamp still lights up - inform the repair service!
red lamp (Pos.6) lights up	Leaving of liquids!	Disconnect the device of mains supply - inform the repair service!
red lamp (Pos.7) lights up	Motor blockade!	1. Check, if there are any objects in the chamber which are not permitted 2. Disconnect current entry (unplug power plug): if necessary remove these objects 3. Press blue protect switch and try to start the device again. If all is checked und the failure isn’t cleared - inform the repair service!
	Connection cable is damaged!	If the connection supply is damaged, it has to be repaired or replaced by manufacturer, responsible repair service or a qualified person to avoid any dangers!
	All other disturbances	**Unplug power plug, close water supply, set up sign “device out of order” and inform the repair service!**

7. Cleaning and maintenance

- Start a disinfection cycle at the end of every day!
- For normal cleaning unplug the power plug (disconnect current entry).
- When cover is closed spray or wipe the plastic case with customary liquid cleaner. **Don’t use scrubbing powder.**
- Clean the cover gasket when the cover is open. **Do not use any aggressive cleaning agents**, which might corrode the material! Control the inside of the inner chamber lid, wipe the borders.
- Refill disinfection tank with disinfection cleaner concentrate!
- Test connection-supplies for leaks or any damages!

8. Dimensions



back side lateral surface top side

1. Drain connection – 70 mm HT-pipe at the machine/drain at the wall DN 70 or 100 minimum 190 mm over ground floor middle drain pipe!
2. Water connection (only cold water) – connection of device ¾", stainless steel flexible pipe 1.5 m/Wall-supply – valve with a ¾" external thread!
3. Connection cable with standard-plug – 1.5 m/230 V; 50 Hz; 16 A/socket provided as standard with a circuit breaker switching the device off.
4. Locking device for transport – 8 bolts 6 x 50 mm, will be replaced by the delivered feet when placing the device.

9. Service/customer service

control for maintenance and repair:

Name of the mechanist or the person who did the job:																				
Work done/spare parts:																				
Disorder:																				
Date:																				

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